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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/896,791	06/29/2001	Anders Berkenstam	13425-040001 / 00244-US	8306

23911 7590 12/19/2003

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EXAMINER	
NICKOL, GARY B	
ART UNIT	**PAPER NUMBER**
1642	

DATE MAILED: 12/19/2003

23

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/896,791	Applicant(s) BERKENSTAM ET AL.	
	Examiner Gary B. Nickol Ph.D.	Art Unit 1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11 and 13-21* is/are pending in the application.

4a) Of the above claim(s) *1,4-11 and 13-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2* is/are rejected.

7)☒ Claim(s) *3* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Response to Amendment

The Amendment filed July 15, 2003 (Paper No. 22) in response to the Office Action of January 15, 2003 is acknowledged and has been entered.

Claims 1-11, 13-21 are pending.

Claims 1, 4-11, 13-21 have been withdrawn from further consideration by the examiner under 37 CFR 1.142(b) as being drawn to non-elected inventions.

Claims 2-3 are pending and are currently under consideration.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Objection Maintained:

The specification is remains objected to because it contains an embedded hyperlink and/or other form of browser-executable code (i.e. see page 14, line 1). Applicant is required to delete all embedded hyperlinks and/or other form of browser-executable codes. See MPEP § 608.01.

Claim 3 remains objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

New Rejections:

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The written description in this case only sets forth an isolated mammalian IPAS polypeptide encoded by a nucleic acid molecule comprising SEQ ID NO:2 and therefore the written description is not commensurate in scope with the claims drawn to complementary nucleic acid sequences encoding functionally equivalent modified forms of IPAS polypeptides which read on allelic variants.

The claims are drawn to isolated polypeptides encoded by nucleic acid molecules that are capable of hybridizing, under stringent hybridization conditions, with nucleotide sequences complementary to the polypeptide-coding region of SEQ ID NO:2 wherein said nucleic acid molecules code for biologically active mammalian IPAS polypeptides or functionally equivalent modified forms thereof. The claims further include isolated polypeptides encoded by nucleic acid

molecules comprising a nucleic acid sequence that is degenerate as a result of the genetic code to a nucleotide sequence of the latter (e.g. SEQ ID NO:2 or any stringent hybridized complements thereof) that code for biologically active mammalian IPAS polypeptides or functionally equivalent modified forms thereof. However, the claims do not require that the encoded polypeptide possess any particular biological activity, nor any particular conserved structure, or other disclosed distinguishing feature. Thus, the claims are drawn to a genus of encoded polypeptide variants.

To provide adequate written description and evidence of possession of a claimed genus, the specification must provide *sufficient* distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of complete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, or any combination thereof. In this case, the broadly claimed polypeptides include a whole universe of non-coding and or coding polynucleotide fragments. Clearly, it would be expected that a substantial number of the hybridizing or complementary polynucleotides encompassed by the claims **would not** share either structural or functional properties with mammalian IPAS polypeptides. Accordingly, in the absence of sufficient recitation of distinguishing identifying characteristics, the specification does not provide adequate written description of the claimed genus.

Vas-Cath Inc. v. Mahurkar, 19USPQ2d 1111, clearly states "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117.) The specification does not "clearly allow persons of

ordinary skill in the art to recognize that [he or she] invented what is claimed." (See *Vas-Cath* at page 1116). As discussed above, the skilled artisan cannot envision the detailed chemical structure of the encompassed genus of polypeptides, and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. The compound itself is required. See *Fiers v. Revel*, 25 USPQ2d 1601 at 1606 (CAFC 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016.

One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481 at 1483. In *Fiddes*, claims directed to mammalian FGF's were found to be unpatentable due to lack of written description for that broad class. The specification provided only the bovine sequence.

Therefore, only an isolated mammalian IPAS polypeptide encoded by a nucleic acid molecule comprising SEQ ID NO:2, but not the full breadth of the claim meets the written description provision of 35 U.S.C. §112, first paragraph. Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Bradfield *et al.* (WO 99/28464, 10 June 1999).

Bradfield *et al.* teach (see attached sequence listing) an isolated mammalian IPAS polypeptide encoded by:

a) a nucleic acid molecule comprising a nucleotide sequence which is capable of hybridizing, under stringent hybridization conditions, with a nucleotide sequence complementary to the polypeptide-coding region of SEQ ID NO:2 which inherently codes for a biologically active mammalian IPAS polypeptide or functionally equivalent modified form thereof.

b) a nucleic acid molecule comprising a nucleic acid sequence which is degenerate as a result of the genetic code to a nucleotide sequence of the latter of SEQ ID NO:2 or any stringent hybridized complement thereof which codes for a biologically active mammalian IPAS polypeptide or functionally equivalent modified form thereof.

All other rejections and or objections are withdrawn in view of applicant's amendments and arguments there to.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary B. Nickol Ph.D. whose telephone number is 703-305-7143. The examiner can normally be reached on M-F, 8:30-5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Caputa can be reached on 703-308-3995. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 for regular communications and 703-308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Gary B. Nickol, Ph.D.
Examiner
Art Unit 1642

GBN
December 12, 2003

Gary B. Nickol

XX
PD 10-JAN-2002.
XX
PF 19-JUN-2001; 2001WO-SE01387.
XX
PR 06-JUL-2000; 2000SE-0002551.
XX
PA (BIOV-) BIOVITRUM AB.
XX
PI Berkenstam A, Bertilsson G, Poellinger L;
XX
DR WPI; 2002-164523/21.
DR N-PSDB; ABK14502.
XX
PT New nucleic acid encoding inhibitory PAS domain protein, useful for
PT identifying specific inhibitors for treating e.g. angiogenesis or
PT tumour growth -
XX
PS Claim 3; Fig 1; 44pp; English.
XX
CC The invention describes an isolated nucleic acid encoding the
CC biologically active inhibitory PAS domain protein or its functionally
CC equivalent modifications. IPAS forms a non-functional heterodimeric
CC complex with HIF-1alpha (hypoxia-induced factor 1alpha), imparing
CC interaction between HIF-1alpha and hypoxia-response elements in genes,
CC e.g. the gene for vascular endothelial growth factor, so contributes to
CC control of hypoxic signalling. The nucleic acid and its encoded
CC polypeptides, are used to identify agents that activate expression of
CC the gene or stimulate activity of the protein. These agents are useful
CC for inhibiting angiogenesis, particularly where associated with ischaemic
CC cardiovascular lesions, stroke or diabetic microvascular diseases, and
CC tumour growth. This is the amino acid sequence of the mouse inhibitory
CC PAS domain,protein (IPAS), described in the method of the invention.
XX
SQ Sequence 307 AA;

Alignment Scores:

Pred. No.:	9.76e-139	Length:	307
Score:	1636.00	Matches:	307
Percent Similarity:	100.00%	Conservative:	0
Best Local Similarity:	100.00%	Mismatches:	0
Query Match:	81.39%	Indels:	0
DB:	23	Gaps:	0

US-09-896-791B-2 (1-1100) x AAU75902 (1-307)

```
Qy      19 ATGGCGTTGGGGCTGCAGCGCGTGAGGTCGAACACCGAGCTGCGGAAGGAGAAGTCGCGG 78
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
        1  MetAlaLeuGlyLeuGlnArgValArgSerAsnThrGluLeuArgLysGluLysSerArg 20

       79  GACGCGGCCCGCAGCCGGCGCAGCCAGGAGACGGAGGTGCTGTACCAGCTGGCGCACACT 138
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     21  AspAlaAlaArgSerArgArgSerGlnGluThrGluValLeuTyrGlnLeuAlaHisThr 40

Qy    139  CTGCCCTTTGCGCGCGGCGTCAGCGCGCACCTGGACAAGGCCTCCATCATGCGCCTCACA 198
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     41  LeuProPheAlaArgGlyValSerAlaHisLeuAspLysAlaSerIleMetArgLeuThr 60

Qy    199  ATCAGCTACCTGCGCATGCACCGCCTCTGCGCAGCAGGTGGAAAAAGGGGGAGAGCCACT 258
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61  IleSerTyrLeuArgMetHisArgLeuCysAlaAlaGlyGlyLysArgGlyArgAlaThr 80

Qy    259  GGACGCCTGCTACCTGAAGGCCCTGGAGGGTTTCGTCATGGTACTCACCGCCGAGGGAGA 318
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     81  GlyArgLeuLeuProGluGlyProGlyGlyPheArgHisGlyThrHisArgArgGlyArg 100

Qy    319  CATGGCTTACCTGTCGGAAAATGTCAGCAAGCACCTGGGCCTCAGTCAGTGGACCTCTGT 378
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    101  HisGlyLeuProValGlyLysCysGlnGlnAlaProGlyProGlnSerValAspLeuCys 120

Qy    379  TCCTCCTCCCTGATACATAACCCCACTCCTGGTACCAATTTCTCTCTGGAGCTCATTGGA 438
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121  SerSerSerLeuIleHisAsnProThrProGlyThrAsnPheSerLeuGluLeuIleGly 140

Qy    439  CACAGTATCTTTGATTTTATCCATCCCTGTGACCAAGAGGAACTTCAAGACGCCCTGACC 498
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    141  HisSerIlePheAspPheIleHisProCysAspGlnGluGluLeuGlnAspAlaLeuThr 160

Qy    499  CCCAGGCCGAACCTGTCAAAGAAGAAGCTGGAAGCCCCAACAGAGCGCCACTTTTCCCTG 558
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    161  ProArgProAsnLeuSerLysLysLysLeuGluAlaProThrGluArgHisPheSerLeu 180

Qy    559  CGAATGAAGAGCACGCTCACCAGCAGAGGGCGCACGCTCAACCTCAAAGCGGCCACCTGG 618
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181  ArgMetLysSerThrLeuThrSerArgGlyArgThrLeuAsnLeuLysAlaAlaThrTrp 200

Qy    619  AAGGTGCTGCACTGCTCAGGACATATGAGGGCCTACAAGCCCCCTGCACAGACTTCCCCT 678
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    201  LysValLeuHisCysSerGlyHisMetArgAlaTyrLysProProAlaGlnThrSerPro 220

Qy    679  GCCGGGAGCCCTCGCTCCGAGCCTCCCCTGCAATGCCTGGTGCTTATCTGTGAAGCCATC 738
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    221  AlaGlySerProArgSerGluProProLeuGlnCysLeuValLeuIleCysGluAlaIle 240

Qy    739  CCCCAGCTCCCCTTCCACGATGGTGCTACTCTGGGTCTTCCACAGGAGAAGACTCCCATC 798
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241  ProGlnLeuProPheHisAspGlyAlaThrLeuGlyLeuProGlnGluLysThrProIle 260

Qy    799  TCTACCTTATTCACCCCTCTTTGGAAGGCACTACTTTGTCTTGTCAAGAGGTGGCCTGTT 858
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    261  SerThrLeuPheThrProLeuTrpLysAlaLeuLeuCysLeuValLysArgTrpProVal 280

Qy    859  CAGGTGCTACAGGGGAAAGGGACTGAATCCTCTCTCCCCTCATGGGTGTTGTGGGCCCTT 918
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    281  GlnValLeuGlnGlyLysGlyThrGluSerSerLeuProSerTrpValLeuTrpAlaLeu 300

Qy    919  AACCGGAAAAATTGTCCTGGC 939
           |||||||||||||||||||||
Db    301  AsnArgLysAsnCysProGly 307
```

RESULT 2
AAY06295
ID AAY06295 standard; Protein; 662 AA.
XX
AC AAY06295;
XX
DT 23-AUG-1999 (first entry)
XX
DE Mouse transcription regulator MOP7.
XX
KW MOP7; member of the PAS superfamily; bHLH-PAS; mouse;
KW transcription regulator; hypoxia inducible factor 3 alpha.
XX
OS Mus musculus.
XX
PN WO9928464-A2.
XX
PD 10-JUN-1999.
XX
PF 27-NOV-1998; 98WO-US25314.
XX
PR 28-NOV-1997; 97US-0066863.
XX
PA (WISC) WISCONSIN ALUMNI RES FOUND.
XX
PI Bradfield CA, Gu YZ, Hogenesch JB;
XX
DR WPI; 1999-371120/31.
DR N-PSDB; AAX58986.
XX
PT Developmental signal transduction associated proteins
XX
PS Claim 6; Page 101; 106pp; English.
XX
CC The present sequence represents mouse MOP7, a novel member of the
CC PAS superfamily, where PAS stands for PER/ARNT/SIM domains. MOP7

CC cDNA (see AAX58986) was identified in a search of murine ESTs designed
CC to identify bHLH-PAS proteins, and by RACE amplification of lung
CC cDNA. MOP7 was characterised as hypoxia inducible factor 3 alpha
CC (HIF 3 alpha). Its expression profile is distinct from that of
CC HIF 1 alpha (see AAY06289), HIF 2 alpha (see AAY06290), MOP3 (see
CC AAY06291), Ah receptor and Ah receptor nuclear translocator (ARNT),
CC suggesting a different functional role. MOP7 probably regulates
CC the same genes as HIF 1 alpha and 2 alpha, as evidenced by its
CC dimerisation with the same partners (ARNT, MOP3) and recognition
CC of the same core response element. MOP7 may have a functional
CC role associated with response to low oxygen in the tissues in
CC which it is expressed. The invention provides novel MOPs 2-9
CC nucleic acids (see AAX58981-88) and proteins (see AAY06289-97).
CC These are useful in a variety of research, diagnostic and
CC therapeutic applications. Several of the MOPs are alpha-class
CC hypoxia-inducible factors. Others are involved in circadian signal
CC transduction.
XX
SQ Sequence 662 AA;

Alignment Scores:

Seq. No.:	2.03e-85	Length:	662
Score:	1045.00	Matches:	218
Percent Similarity:	85.88%	Conservative:	1
Best Local Similarity:	85.49%	Mismatches:	5
Query Match:	51.99%	Indels:	31
DB:	20	Gaps:	3

US-09-896-791B-2 (1-1100) x AAY06295 (1-662)

```
Qy     43 AGGTCGAACACCGAGCTGCGGAAGGAGAAGTCGCGGGACGCGGCCCGCAGCCGGCGCAGC 102
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      7 ArgSerAsnThrGluLeuArgLysGluLysSerArgAspAlaAlaArgSerArgArgSer 26

Qy    103 CAGGAGACGGAGGTGCTGTACCAGCTGGCGCACACTCTGCCCTTTGCGCGCGGCGTCAGC 162
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     27 GlnGluThrGluValLeuTyrGlnLeuAlaHisThrLeuProPheAlaArgGlyValSer 46

Qy    163 GCGCACCTGGACAAGGCCTCCATCATGCGCCTCACAATCAGCTACCTGCGCATGCACCGC 222
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     47 AlaHisLeuAspLysAlaSerIleMetArgLeuThrIleSerTyrLeuArgMetHisArg 66

Qy    223 CTCTGCGCAGCAGGTGGAA----------------AAAGGGGGAGAGCCACTGGACGCCTG 267
          ||||||||||||||| |||                ||||||||||||||||||||||||
Db     67 LeuCysAlaAlaGly-GluTrpAsnGlnValGluLysGlyGlyGluProLeuAspAlaCy 86

Qy    268 CTACCTGAAGGCCCTGGAGGGTTTCGTCATGGTACTCACCGCCGAGGGAGACATGGCTTA 327
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
       86 sTyrLeuLysAlaLeuGluGlyPheValMetValLeuThrAlaGluGlyAspMetAlaTy 106

Qy    328 CCTGTCGGAAAATGTCAGCAAGCACCTGGGCCTCAGTCAGTGGACCTCTGTTCCTCCTCC 387
          ||||||||||||||||||||||||||||||||||||
Db    106 rLeuSerGluAsnValSerLysHisLeuGlyLeuSerGln---------------------- 119

Qy    388 CTGATACATAACCCCACTCCTGGTACCAATTTCTCTCTGGAGCTCATTGGACACAGTATC 447
                                          |||  ||||||||||||||||||||
Db    120 ----------------------------------Leu--GluLeuIleGlyHisSerIle 127

Qy    448 TTTGATTTTATCCATCCCTGTGACCAAGAGGAACTTCAAGACGCCCTGACCCCCAGGCCG 507
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    128 PheAspPheIleHisProCysAspGlnGluGluLeuGlnAspAlaLeuThrProArgPro 147

Qy    508 AACCTGTCAAAGAAGAAGCTGGAAGCCCCAACAGAGCGCCACTTTTCCCTGCGAATGAAG 567
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    148 AsnLeuSerLysLysLysLeuGluAlaProThrGluArgHisPheSerLeuArgMetLys 167

Qy    568 AGCACGCTCACCAGCAGAGGGCGCACGCTCAACCTCAAAGCGGCCACCTGGAAGGTGCTG 627
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    168 SerThrLeuThrSerArgGlyArgThrLeuAsnLeuLysAlaAlaThrTrpLysValLeu 187

Qy    628 CACTGCTCAGGACATATGAGGGCCTACAAGCCCCCTGCACAGACTTCCCCTGCCGGGAGC 687
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    188 HisCysSerGlyHisMetArgAlaTyrLysProProAlaGlnThrSerProAlaGlySer 207

Qy    688 CCTCGCTCCGAGCCTCCCCTGCAATGCCTGGTGCTTATCTGTGAAGCCATCCCC------ 741
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    208 ProArgSerGluProProLeuGlnCysLeuValLeuIleCysGluAlaIleProHisPro 227

Qy    742 ----------CAGCTCCCCTTCCACGATGGTGCTACTCTG 771
                  :::   |||         ||||||   |||
Db    228 AlaSerLeuGluProProLeuGlyArgGlyAlaPheLeu 240
```

RESULT 3
AAB93326
ID AAB93326 standard; Protein; 632 AA.
XX
AC AAB93326;
XX
DT 26-JUN-2001 (first entry)
XX
DE Human protein sequence SEQ ID NO:12422.
XX
KW Human; primer; detection; diagnosis; antisense therapy; gene therapy.
XX
OS Homo sapiens.
XX
PN EP1074617-A2.
XX
PD 07-FEB-2001.
XX
PF 28-JUL-2000; 2000EP-0116126.
XX
PR 29-JUL-1999; 99JP-0248036.
PR 27-AUG-1999; 99JP-0300253.
PR 11-JAN-2000; 2000JP-0118776.
PR 02-MAY-2000; 2000JP-0183767.
PR 09-JUN-2000; 2000JP-0241899.
XX
PA (HELI-) HELIX RES INST.
XX
PI Ota T, Isogai T, Nishikawa T, Hayashi K, Saito K, Yamamoto J;
PI Ishii S, Sugiyama T, Wakamatsu A, Nagai K, Otsuki T;
XX
DR WPI; 2001-318749/34.
XX
PT Primer sets for synthesizing polynucleotides, particularly the 5602
PT full-length cDNAs defined in the specification, and for the detection
PT and/or diagnosis of the abnormality of the proteins encoded by the
PT full-length cDNAs -
XX
PS Claim 8; SEQ ID 12422; 2537pp + CD ROM; English.
XX
CC The present invention describes primer sets for synthesising 5602
CC full-length cDNAs defined in the specification. Where a primer set
CC comprises: (a) an oligo-dT primer and an oligonucleotide complementary
CC to the complementary strand of a polynucleotide which comprises one of
CC the 5602 nucleotide sequences defined in the specification, where the
CC oligonucleotide comprises at least 15 nucleotides; or (b) a combination
CC of an oligonucleotide comprising a sequence complementary to the
CC complementary strand of a polynucleotide which comprises a 5'-end
CC sequence and an oligonucleotide comprising a sequence complementary to a
CC polynucleotide which comprises a 3'-end sequence, where the
CC oligonucleotide comprises at least 15 nucleotides and the combination of
CC the 5'-end sequence/3'-end sequence is selected from those defined in
CC the specification. The primer sets can be used in antisense therapy and
CC in gene therapy. The primers are useful for synthesising polynucleotides,
CC particularly full-length cDNAs. The primers are also useful for the
CC detection and/or diagnosis of the abnormality of the proteins encoded by
CC the full-length cDNAs. The primers allow obtaining of the full-length
CC cDNAs easily without any specialised methods. AAH03166 to AAH13628 and
CC AAH13633 to AAH18742 represent human cDNA sequences; AAB92446 to
CC AAB95893 represent human amino acid sequences; and AAH13629 to AAH13632
CC represent oligonucleotides, all of which are used in the exemplification
CC of the present invention.
XX
SQ Sequence 632 AA;